

FACT SHEET FOR NPDES PERMIT WA-000323-9
RICHMOND BEACH - ASPHALT PLANT AND TERMINAL

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the Wastewater Discharge Permit Program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), and water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty (30) days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A—Public Involvement of the fact sheet for more detail on the public notice procedures). Site maps are enclosed in Appendix C.

This fact sheet has been reviewed by the Permittee and errors in fact have been corrected. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments (Appendix D) will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. Changes to the permit will be addressed in Appendix D—Response to Comments.

GENERAL INFORMATION	
Applicant:	Chevron Products Company
Facility Name and Address:	Richmond Beach Asphalt Plant and Terminal 20500 Richmond Beach Drive NW Richmond Beach, WA 98177
Type of Facility:	Asphalt Plant and Terminal
SIC Code:	5171, 2951
Discharge Location:	Waterbody Name: Puget Sound Latitude: 47° 47' 04" N Longitude: 122° 23' 40" W
Water Body ID Number:	WA-PS-0240

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

Chevron Products Company operates the Richmond Beach Asphalt Plant at Point Wells on the eastern shore of Puget Sound, near the boundary of King and Snohomish Counties. The Richmond Beach Asphalt Plant and Terminal, located on approximately 18 acres adjacent to the closed Point Wells Terminal, is a manufacturer of, and terminal for paving and industrial asphalts.

HISTORY

Petroleum terminal operations at the site date back to 1912. The facility and property were originally owned and operated by Shell Oil as a light oil terminal. Chevron purchased the facility and property in 1950, at which time a vacuum distillation column and associated equipment were installed for the purpose of manufacturing asphalt. Blending, storage, and distribution operations of light petroleum products at the Point Wells Terminal were terminated in 1994. Demolition of the terminal facilities began in August 1995. Prior to demolition activities, all products were removed from piping and storage tanks, tanks cleaned and certified for entry, and all underground storage tanks removed. Aboveground tanks remaining at the former terminal site are used and managed by the Asphalt Plant and Terminal. Other tanks not in use for asphalt terminal operations have been leased for storage of heavy fuel oils.

The Asphalt Plant closed the distillation unit (refining) at the facility in June 2000, but has continued manufacturing various asphalt products (blending only) and operating as a terminal.

INDUSTRIAL PROCESS

The Asphalt Plant and Terminal manufactures asphalt products and ships and stores the petroleum distillates used for manufacturing and finished products. Finished asphalt is sold as such, blended into cutbacks or emulsions, or air blown to manufacture industrial asphalt. The plant currently includes the following manufacturing equipment:

- Four (4) Air Blowing Stills
- Emulsion Mill

Ancillary operations include blending equipment, aboveground storage tanks, shipping and trucking facilities, dock facilities, rail car offloading facilities, hot oil furnace, boilers for steam production, maintenance shop, office, warehouse, laboratory, and wastewater and stormwater treatment facilities. The crude distillation unit and cooling tower were shut down in June 2000.

WASTEWATER MANAGEMENT AND TREATMENT

Sanitary wastewater from the facility is collected and discharged to the King County Wastewater Treatment Plant.

The process wastewater streams from the Asphalt Plant include boiler system wastewater, air blowing stills wastewater, wastewater from tank draws, and other miscellaneous intermittent wastewater streams, including maintenance wash water, tank hydro testing, and fire water equipment testing. Due to the changes at the plant with the closure of the distillation unit, petroleum products stored in the aboveground tanks require infrequent water draws, if any. This, along with the elimination of wastewater from the distillation unit and cooling tower, has significantly reduced industrial wastewater volumes from the facility.

Nonsanitary wastewater from the asphalt manufacturing area is conveyed to the north API separator and from there, on to the sand trap, corrugated plate interceptor (CPI) unit, and modulation tank (tank 51). Wastewater is batch-discharged from the modulation tank to the induced air flotation (Quadricell) treatment unit and from there to Puget Sound through Outfall 001. Oily slop water from the API and CPI separators is sent to oil recovery tanks to remove oil for recycling. The tank water is conveyed back to the separators for completed treatment prior to discharge to Puget Sound. Stormwater runoff, including stormwater from the former Point Wells Terminal, is collected and conveyed to the treatment system, described above, prior to discharge to Puget Sound.

Solids that accumulate in the API separator and the CPI unit are removed on an intermittent basis during unit shutdowns or scheduled maintenance. Solids from these units are handled, transported, and disposed of at an offsite facility in accordance with applicable state and federal regulations.

DISCHARGE OUTFALL

There are three outfalls located at the facility. Treated process water and treated stormwater runoff from Point Wells are discharged through Outfall 001 and are addressed by this permit. Outfall 002, which is also permitted by the Department for the discharge of treated contaminated ground water and off-site stormwater run-on to the facility under a separate NPDES permit no. WA-003170-4. Outfall 003 discharges off-site stormwater run-on to the facility.

The discharge location for treated process water and stormwater is through Outfall 001 located approximately 100 feet west of the Puget Sound shoreline. The outfall discharge point is approximately 11 feet below mean sea level. The outfall lies parallel to the small service dock at the Asphalt Plant.

A dilution ratio study was performed for Outfall 001 in 1993 and revised in 1995. The study was approved by the Department in March 1995. The study concluded that the existing 18-inch discharge outfall needed to be modified by installation of an 8-inch port to improve mixing of the effluent. The installation of the 8-inch port was completed in January 1997. The resulting mixing zone description for Outfall 001 is described in the S1.C of the permit.

PERMIT STATUS

The previous permit for this facility was issued on June 30, 1997, with an expiration date of June 30, 2002. The expired permit was extended from June 30, 2002 to present, or until the new permit can be issued to Chevron. The previous permit placed effluent limits on flow, biological oxygen demand (BOD), chemical oxygen demand (COD), phenolic compounds, ammonia (as nitrogen), sulfide, total chromium, hexavalent chromium, total suspended solids, oil and grease, pH, acute and chronic toxicity. The permit required periodic monitoring and reporting for these effluent limit parameters as well as for visible sheen, benzene, toluene, ethyl benzene, and total xylenes, and priority pollutants.

An application for permit renewal was submitted to the Department on December 24, 2001, and amended on January 30, 2002. The Department accepted the application on June 10, 2002.

WASTEWATER CHARACTERIZATION

The proposed wastewater discharge has been characterized for the following parameters:

Parameter	Outfall 001		
	Maximum Detected Value	Average Detected Value	Units
BOD	68	16.8	mg/L
COD	110	48.7	mg/L
TOC	8	N/A	mg/L
TSS	14	5.4	mg/L
Ammonia (as N)	2.6	0.5	mg/L
Flow	0.800	0.122	MGD
Temperature (winter)	11	9	°C
Temperature (summer)	27	22	°C
pH	7.6	6 (min.)	Units
Oil & Grease	7	1.4	mg/L
Sulfide	<0.2	<0.2	mg/L
Phenols	0.53	0.13	mg/L
Cyanide	<0.01	<0.01	mg/L
Antimony	<50	<50	µg/L
Arsenic	<5	<5	µg/L
Beryllium	<5	<5	µg/L
Cadmium	<5	<5	µg/L
Chromium (total)	<0.007	<0.007	mg/L
Chromium (VI)	<0.01	<0.01	mg/L
Copper	<10	<10	µg/L
Iron	1.9	N/A	mg/L
Lead	5.8	2.9	µg/L
Mercury	<0.2	<0.2	µg/L
Nickel	<20	<20	µg/L
Selenium	<5	<5	µg/L
Silver	<10	<10	µg/L
Thallium	<10	<10	µg/L
Zinc	110	90	µg/L
Benzene	<5	<5	µg/L
Ethylbenzene	<5	<5	µg/L
Toluene	<5	<5	µg/L
Xylenes (not reported on 2C)	<5	<5	µg/L
EPA 624 VOCs, not listed above	ND	ND	µg/L
EPA 625 SVOCs, not listed above	ND	ND	µg/L
EPA 608, Pest. & PCBs	ND	ND	µg/L

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on January 10, 2001. During the previous permit cycle, the Permittee remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

PROPOSED PERMIT LIMITATIONS AND CONDITIONS

Federal and state regulations require that effluent limitations set forth in an NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific types of wastewater. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the surface water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

The stormwater runoff from the former terminal is combined with stormwater runoff and process wastewater from the asphalt plant, treated, and discharged in batches through Outfall 001. Stormwater and wastewater discharged through Outfall 001 is subject to the requirements and conditions of this permit.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based limitations are set by regulation in the Federal effluent guidelines or on a case-by-case basis using best professional judgment (BPJ) when no effluent guidelines exist for an industrial category. Technology-based limits represent the best treatment a facility can achieve consistent with the economic means of the industry as a whole (in the case of effluent guidelines) or of the specific facility being permitted (in the case of BPJ). Technology-based effluent limits are process control parameters or numbers which indicate that a process, which in this case is wastewater treatment, is not functioning properly.

The operation engaged in by this asphalt plant falls under the federal guidelines of 40 CFR 443, subpart A, C, and D for paving and roofing materials (tars and asphalt) point source category. In accordance with the effluent guidelines for Subpart A - Asphalt Emulsion Subcategory, Subpart C - Asphalt Roofing Subcategory, and Subpart D - Linoleum and Printed Asphalt Felt Subcategory, the facility is required to meet the technology-based effluent limits for these subcategories. The parameters listed under these subcategories are as follows: oil & grease, total suspended solids, and pH.

The technology-based effluent limitations set in this permit are as follows:

Outfall	Parameter	Daily Maximum
001	Oil & Grease	15 mg/L
	TSS	45 mg/L
	TPH-G	1 mg/L
	TPH-D	5 mg/L
	Phenolic Compounds	1 mg/L
	pH	Between 6 and 9 s.u.

The oil & grease limit is set consistent with the Department's policy for Direct Discharge which is based on the proven performance of gravity oil/water separators. This limit is more stringent than the technology-based limit in the effluent guidelines of 40 CFR 433, subpart A, C, and D.

The TSS and phenolic compounds limits have remained unchanged from the previous permit. The TSS limit is more stringent than the technology-based limit in the effluent guidelines of 40 CFR 433, subpart A, C and D.

TPH-G and D (total petroleum hydrocarbon – gasoline and diesel) limits are set based on best professional judgment that terminal facilities with similar wastewater characteristics have consistently demonstrated meeting these limits.

The maximum daily effluent limit for pH is a technology-based limit based on the effluent guidelines of 40 CFR 433, subpart A, C, and D.

The above technology-based effluent limits are required to be met at the Quadricell outlet prior to discharge to the Sound.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established surface water quality standards. The Washington State surface water quality standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's water quality standards for surface waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the water quality standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a degradation of existing water quality or beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the water body's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The water quality standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both “acute” and “chronic” mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention and control (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100. The National Toxics Rule (EPA 1992) allows the chronic mixing zone to be used to meet human health criteria.

MIXING ZONE AUTHORIZATION

A dilution ratio study was performed for Outfall 001 in 1993 and revised in 1995. The report was approved by the Department of Ecology (Department) in March 1995. The study indicated that reduction of the outfall discharge port from 18 inches to 8 inches would increase the dilution in both the acute and chronic zones by more than a factor of 4. An engineering report for the reduction of outfall port diameter was approved by the Department of Ecology (Department) on August 1996. The 8-inch discharge port was installed in January 1997. The steady-state dilution modeling results for the 8-inch diameter outfall port indicates dilutions at the acute zone boundary of 10:1, and dilutions at the chronic zone boundary of 32:1 under average effluent flow.

These mixing zones are authorized in accordance with the geometric configuration and flow restriction for mixing zones given in Chapter 173-201A WAC and is defined in Special Condition S1.B as follows:

- The depth of mixing zone is the depth of the 8-inch diameter outfall below the water surface (11 feet).
- The zone of chronic criteria exceedance is defined as not greater than 211 (200 feet plus 11 feet water depth) feet in any horizontal direction from the outfall.
- The zone of acute criteria exceedance is defined as not greater than 21 feet in any horizontal direction from the outfall.

WATER QUALITY-BASED EFFLUENT LIMITS

Total recoverable zinc has been detected in the effluent at the Quadricell at a concentration above 90 µg/L. No water quality violations beyond the acute or chronic mixing zone boundaries have been reported. In addition, the Department has noted that the detection limits reported by the Permittee for copper and pentachlorophenol (PCP) were above the acute marine water quality criteria. The Permittee analyzed copper and PCP in accordance with the permit-required analytical methods. Although no water quality violations beyond the acute or chronic mixing zones boundaries were inferred (assuming concentrations at the reported detection levels), the Department is requiring that the Permittee reanalyze these parameters using a lower detection limit for copper and PCP. PCP is believed to be absent in the process of asphalt manufacturing. The analysis will verify this. Zinc will be required to be monitored on a monthly basis.

The water quality-based effluent limit for pH (WAC 173-201A) for a Class AA marine water body is between 7 and 8.5 standard units (s.u.) with a human-caused variation of less than 0.2 units. The technology based effluent limit for pH is between 6 and 9 standard units. The point of compliance with the pH standard is the boundary of the chronic dilution zone at critical conditions. Thus, based on technology, the effluent pH limitation must be within 6 to 9, and based on water quality, the pH limitation must be within 7 to 8.5 at the edge of the chronic zone.

However, due to the high buffering capacity of marine water, compliance with the technology-based limits of 6 to 9 s. u. is expected to assure compliance with the water quality standards for surface waters. A case study on marine water buffering capacity was conducted by Pioneer Chlor Alkali plant in Tacoma, WA. (NPDES Permit WA-003726-5). The study indicated salt water provided better buffering capacity to an effluent with pH of less than 7 than with higher pHs. As a result, the Department has determined to set a technology-based limit for pH in this permit.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to Puget Sound which is designated as a Class AA (extraordinary marine water body) receiving water in the vicinity of the outfall. Potential characteristic uses of Class AA waters include the following:

water supply (domestic, industrial, agricultural); fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

The United States Environmental Protection Agency (EPA) named Puget Sound an estuary of national significance in 1988. Its waters support international commerce, commercial and recreational fisheries, shellfish beds, and a variety of wildlife habitat. Recreational opportunities abound. A growing population and increased urban development have impacted Puget Sound. A number of government agencies, nonprofit environmental organizations, and citizen groups are dedicated to protecting and cleaning up the Sound.

WHOLE EFFLUENT TOXICITY

The water quality standards for surface waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Chronic toxicity tests measure various sublethal toxic responses such as reduced growth or diminished reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC₅₀, EC₅₀, IC₂₅, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*, which is referenced in the permit. Any Permittee interested in receiving a copy of this publication may call Randall Marshall at (360) 407-6445 for a copy. Ecology recommends that Permittees send a copy of the acute or chronic toxicity sections(s) of their permits to their laboratory of choice.

Based on the acute and chronic toxicity data submitted during the previous permit term between June 1997 and June 2002, the acute and chronic toxicity limits were not exceeded. Table 1 shows that the percent survival in 100% effluent was above 65% in the acute tests. The lowest percent survival in 100% effluent in an acute test was 72% on May 19, 1999. Table 2 shows the chronic toxicity results as NOEC, and LOEC in percent effluent. The lowest LOEC in a chronic test was 18% effluent on March 9, 1999 which is above the ACEC of 8.3% effluent as allowed in the previous permit. Due to this reason, there are no changes proposed for the acute and chronic toxicity limits from the previous permit. The monitoring frequency proposed in this permit is semi-annual acute and chronic toxicity testing. If the Permittee consistently meets the toxicity limits for two years, the monitoring frequency will be reduced to annually.

Table 1 – Acute WET Test Results as %Survival in 100% Effluent

Test #	Sample Date	Start Date	Organism	Endpoint	% Survival
AQTX1237	6/17/1997	6/18/1997	<i>Daphnia magna</i>	48-hour Survival	100.0%
AQTX1470	9/9/1997	9/10/1997	<i>Daphnia magna</i>	48-hour Survival	100.0%
AQTX1726	3/24/1998	3/25/1998	<i>Daphnia magna</i>	48-hour Survival	100.0%
AQTX1855	6/22/1998	6/23/1998	topsmelt	96-hour Survival	100.0%
AQTX2003	10/1/1998	10/2/1998	<i>Daphnia magna</i>	48-hour Survival	100.0%
AQTX2049	11/18/1998	11/19/1998	topsmelt	96-hour Survival	100.0%
AQTX2129	3/9/1999	3/10/1999	<i>Daphnia magna</i>	48-hour Survival	100.0%
AQTX2155	5/19/1999 7:00	5/20/1999 15:00	topsmelt	96-hour Survival	72.0%
AQTX003192	9/14/1999 8:00	9/15/1999 16:10	<i>Daphnia magna</i>	48-hour Survival	100.0%
AQTX003194	12/6/1999 8:00	12/7/1999 15:00	topsmelt	96-hour Survival	100.0%
AQTX003204	4/6/2000 8:00	4/7/2000 11:30	<i>Daphnia magna</i>	48-hour Survival	95.0%
AQTX002314	4/6/2000 8:00	4/7/2000 11:30	<i>Daphnia magna</i>	48-hour Survival	95.0%
AQTX003202	8/22/2000 8:00	8/23/2000 15:20	<i>Daphnia magna</i>	48-hour Survival	100.0%
AQTX003190	11/13/2000 8:00	11/14/2000 11:45	topsmelt	96-hour Survival	100.0%
AQTX003188	3/20/2001 8:00	3/21/2001 15:20	<i>Daphnia magna</i>	48-hour Survival	100.0%
AQTX003196	6/11/2001 8:00	6/12/2001 13:30	topsmelt	96-hour Survival	96.0%
AQTX003198	9/18/2001 8:00	9/19/2001 15:40	<i>Daphnia magna</i>	48-hour Survival	85.0%
AQTX003200	11/7/2001 8:00	11/8/2001 12:30	topsmelt	96-hour Survival	96.0%
AQTX003268	4/15/2002 7:30	4/16/2002 16:15	topsmelt	96-hour Survival	100.0%
AQTX003270	7/25/2002 6:00	7/26/2002 12:45	<i>Daphnia magna</i>	48-hour Survival	90.0%
AQTX003272	11/6/2002 9:00	11/7/2002 14:15	topsmelt	96-hour Survival	100.0%

Table 2 – Chronic WET Test Results as NOEC and LOEC in % Effluent

Test #	Sample Date	Start Date	Organism	Endpoint	NOEC	LOEC
AQTX1248	6/17/1997	6/18/1997	sand dollar	Proportion Fertilized	35	70
AQTX1469	9/9/1997	9/10/1997	sand dollar	Proportion Fertilized	18	35
AQTX1595	1/7/1998	1/8/1998	topsmelt	7-day Survival	100	> 100
Test #	Sample Date	Start Date	Organism	Endpoint	NOEC	LOEC
				Biomass	100	> 100
				Weight	100	> 100
AQTX1725	3/24/1998	3/25/1998	sand dollar	Proportion Fertilized	70	> 70
AQTX1856	6/22/1998	6/23/1998	topsmelt	7-day Survival	100	> 100
				Biomass	40	100
				Weight	40	100
AQTX2004	10/1/1998	10/2/1998	sand dollar	Proportion Fertilized	70	> 70
AQTX2050	11/18/1998	11/19/1998	topsmelt	7-day Survival	100	> 100
				Biomass	40	100
				Weight	16	40
AQTX2130	3/9/1999	3/10/1999	purple sea urchin	Proportion Fertilized	8.3	18
AQTX2156	5/19/1999 7:00	5/20/1999 15:00	topsmelt	7-day Survival	100	> 100
				Biomass	40	100
				Weight	40	100
AQTX003193	9/14/1999 8:00	9/15/1999 15:40	sand dollar	Proportion Fertilized	18	35
AQTX003195	12/6/1999 8:00	12/7/1999 15:00	topsmelt	7-day Survival	100	> 100
				Biomass	16	40
				Weight	40	100
AQTX002313	3/13/2000 8:30	3/14/2000 15:00	purple sea urchin	Proportion Fertilized	18	35
AQTX003203	8/22/2000 8:00	8/23/2000 16:00	sand dollar	Proportion Fertilized	70	> 70
AQTX003191	11/13/2000 8:00	11/14/2000 11:45	topsmelt	7-day Survival	100	> 100
				Biomass	100	> 100
				Weight	100	> 100
AQTX003189	3/5/2001 8:00	3/6/2001 14:40	sand dollar	Proportion Fertilized	18	35
AQTX003197	6/11/2001 8:00	6/12/2001 13:30	topsmelt	7-day Survival	100	> 100
				Biomass	100	> 100
				Weight	100	> 100
AQTX003199	9/18/2001 8:00	9/19/2001 16:00	sand dollar	Proportion Fertilized	35	70
AQTX003201	11/7/2001 8:00	11/8/2001 12:30	topsmelt	7-day Survival	100	> 100
				Biomass	100	> 100
				Weight	100	> 100
AQTX003269	4/15/2002 7:30	4/16/2002 16:15	topsmelt	7-day Survival	100	> 100
				Biomass	100	> 100
				Weight	100	> 100
AQTX003271	7/25/2002 6:00	7/26/2002 16:35	sand dollar	Proportion Fertilized	70	> 70
AQTX003273	11/6/2002 9:00	11/7/2002 14:15	topsmelt	7-day Survival	100	> 100
				Biomass	40	100
				Weight	40	100

HUMAN HEALTH

The water quality standards now include 91 numeric human health-based criteria. The numeric human health-based criterion for benzene is 71 µg/L. Benzene concentrations in the effluent have been reported in the permit application not to exceed the human health criteria. The Department proposes to set a limit for benzene at 71 µg/L in this permit. The imposition of this limit will be reevaluated using data generated for this permit term, for next permit renewal.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

Chevron completed a sediment baseline study in August 1994. The report is under review by the Department's Sediment Management Unit. Any additional sediment testing requirements that must be completed before the end of this permit cycle will be pursued through an administrative order or, if necessary, through modification of this permit to institute a Sediment Impact Zone (SIZ).

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated ground water quality standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department are required to be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This site has petroleum hydrocarbon contamination in ground water resulting from past practices by the Permittee. The ground water contamination and cleanup remediation activity on-site are currently being addressed by a separate NPDES Permit, WA-003170-4. Therefore, no ground water limits is set in this permit.

COMPARISON OF EFFLUENT LIMITS IN THE PROPOSED PERMIT WITH THOSE IN THE PREVIOUS PERMIT

	Previous Permit		Current Permit
Parameters	Daily Maximum	Monthly Average	Daily Maximum
Oil & Grease	15 mg/L	10 mg/L	15 mg/L
Ethylbenzene	---	---	---
pH	Between 6 and 9 s.u.		Between 6 and 9 s.u.
TSS	45 mg/L	30 mg/L	45 mg/L
Phenols (T)	1.5 lb/day	0.5 lb/day	1 mg/L
BOD ₅	196 lb/day	104 lb/day	
COD	1008 lb/day	521 lb/day	
Ammonia as N	24.2 lb/day	11 lb/day	
Sulfide	1.3 lb/day	0.6 lb/day	
Total Chromium	1.6 lb/day	0.5 lb/day	
Hex. Chromium	0.1 lb/day	0.05 lb/day	
Benzene			71 µg/L
TPH-G			1 mg/L
TPH-D			5 mg/L

Operations at the Chevron Products Company Richmond Beach facility have changed significantly since the issuance of the previous permit in 1997 when the facility operated as a refinery and effluent guidelines under 40 CFR 419 Part A (Topping Subcategory) were applied. Refining operations ceased in June 2000. Changes to the permit were deferred until the end of the permit cycle. The changes to the effluent limits in this proposed permit reflect this change in operations as well as the applicable technology-based, and water quality-based effluent limitations.

MONITORING AND REPORTING

Effluent monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring and testing schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

OTHER PERMIT CONDITIONS

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under Section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

SOLID WASTE DISPOSAL

This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee shall discharge no leachate of solid waste to waters of the state.

OUTFALL EVALUATION

Proposed permit Condition S.7 requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to evaluate the extent of sediment accumulations in the vicinity of the outfall.

TREATMENT SYSTEM OPERATING PLAN

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system [40 CFR 122.41(e)] and WAC 173-220-150 (1)(g). An Operation and Maintenance Manual was submitted as required by state regulation for the construction of wastewater treatment facilities (WAC 173-240-150). It has been determined that the implementation of the procedures in the Treatment System Operating Plan is a reasonable measure to ensure compliance with the terms and limitations in the permit.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

This permit requires the Permittee to implement all best management practices (BMPs) as identified in the developed Stormwater Pollution Prevention Plan. Any changes made to reduce, eliminate, and prevent the pollution of stormwater on-site, shall be updated on the Stormwater Pollution Prevention Plan.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary, to meet water quality standards for surface waters, sediment quality standards, or water quality standards for ground waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxic pollutants, protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. Chevron Richmond Beach/Point Wells site is located on the boundary of the Snohomish and the Cedar/Green Water Quality Management Area (WQMA). The Department proposes that this permit be issued for a period of five (5) years to be consistent with the Cedar/Green permit issuance planning year.

REVIEW BY THE PERMITTEE

The proposed permit and fact sheet were reviewed by the Permittee for verification of facts.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

Department of Ecology's *Permit Writer's Manual*, Ecology Publication 92-109, July 1994.

NDPES permit application submitted by Chevron Point Wells on December 24, 2001, and amended on January 30, 2002.

Sediment Management Standards of the State of Washington, Chapter 173-204 WAC, March 1991.

Water Quality Standards for Surface Waters of the State of Washington, Chapter 173-201A WAC, November 1992.

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public Notice of Application (PNOA) was published on September 3 and 10, 2002, in the *Seattle Times* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department published a Public Notice of Draft (PNOD) on May 31, 2003, in the *Seattle Times* to inform the public that a draft permit and fact sheet were available for review. Interested persons were invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents were available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments were mailed to:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008-5452

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30)-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (425) 649-7201 or by writing to the address listed above.

APPENDIX B—GLOSSARY

Acute Toxicity—The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

Ambient Water Quality—The existing environmental condition of the water in a receiving water body.

Best Management Practices (BMPs)—Schedules of activities; prohibitions of practices; maintenance procedures; and other physical, structural, and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

Bypass—The intentional diversion of waste streams from any portion of a treatment facility.

Chronic Toxicity—The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)—The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Composite Sample—A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity—Clearing, grading, excavation, and any other activity which disturbs the surface of the land. Such activities may include road building; construction of residential houses, office buildings, or industrial buildings; and demolition activity.

Critical Condition—The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Daily Maximum Discharge Limitation—The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Dilution Factor—A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction.

Engineering Report—A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Grab Sample—A single sample or measurement taken at a specific time or over as short a period of time as is feasible.

Industrial Wastewater—Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business; from the development of any natural resource; or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Mixing Zone—An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

Monthly Average—The average of the measured values obtained over a calendar month's time.

National Pollutant Discharge Elimination System (NPDES)—The NPDES (Section 402 of the Clean Water Act) is the federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/state permits issued under both state and federal laws.

pH—The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Technology-based Effluent Limit—A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)—Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters—Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington.

Stormwater—That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset—An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit—A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C—SITE MAPS

APPENDIX D—RESPONSE TO COMMENTS